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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/537,231	05/31/2005	Takeo Yamazaki	03500.017930	6366
5514 7590 01/24/2008 FITZPATRICK CELLA HARPER & SCINTO 30 ROCKEFELLER PLAZA NEW YORK, NY 10112			EXAMINER LEE, CLOUD K	
			ART UNIT 3753	PAPER NUMBER
			MAIL DATE 01/24/2008	DELIVERY MODE PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	Application No. 10/537,231	Applicant(s) YAMAZAKI ET AL.	
	Examiner Cloud K. Lee	Art Unit 3753	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

#### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) ☒ Responsive to communication(s) filed on 31 May 2005.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) ☒ Claim(s) 1-16 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-16 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 31 May 2005 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All    b) ☐ Some \* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)  | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)   | 5) <input type="checkbox"/> Notice of Informal Patent Application                       |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)<br>Paper No(s)/Mail Date <u>5/31/05 6/16/06 8/30/06</u> . | 6) <input type="checkbox"/> Other: _____  |

## DETAILED ACTION

### *Claim Rejections - 35 USC § 112*

1. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

2. Claims 2-3 and 15 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

It is vague and indefinite as to what is meant by “for taking at a prescribed position of the valve” in claim 2 lines 3-4. One of ordinary skill in the art would not be apprised of the metes and bounds of these limitations. What is “for taking” means?

It is vague and indefinite as to what is meant by “a prescribed direction” in claim 3 line 3. What is the “prescribed direction” and which way is the “prescribed direction”? It appears that applicant is intended to recite “the fluid to flow through the flow channel in a first direction”.

It is vague and indefinite as to what is meant by “the flow of the fluid is controlled by the detecting means” in claim 15. The detecting means is a device that is detecting the contact of the movable electrode with the fixed electrode. One of ordinary skill in the art would not be apprised of the metes and bounds of this claim because the detecting means is clearly not capable of controlling the flow of fluid, but rather, detecting the position of the valve.

3. Claims 14-15 are rejected under 35 U.S.C. 112, second paragraph, as being incomplete for omitting essential elements, such omission amounting to a gap between the elements. See MPEP § 2172.01. The omitted elements are: the control system that controls the flow of the fluid according to the detected electrostatic capacity or the detecting means.

*Claim Objections*

4. Claims 4 and 13 are objected to because of the following informalities: Claims 4 and 13 are interpreted as “the third flow channel is connectible to a fluid element for analysis of the fluid” because the current wording of the claims are not necessarily recited a fluid element. Appropriate correction is required.

*Claim Rejections - 35 USC § 102*

5. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

6. Claims 1-3 (as understood under broadly reasonable interpretation) are rejected under 35 U.S.C. 102(b) as being anticipated by Clark (US Patent No. 5,694,977).

Clark discloses a normal open check valve comprising a flow channel (114), wherein the valve allows flow of fluid in a first direction (116) when the pressure (flow rate) is lower than the pressure difference and the spring force or elastic body (109), wherein the valve stops the fluid when the pressure (flow rate) exceed the spring force or elastic body (109) and the pressure difference, wherein the valve allows flow of fluid in a second direction (reverse to the first direction) when the pressure (flow rate) is lower than the spring force and the pressure difference.

*Claim Rejections - 35 USC § 103*

7. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

8. Claims 1-13 (as understood under broadly reasonable interpretation) are rejected under 35 U.S.C. 103(a) as being unpatentable over Chow et al (US Patent No. 5,800,690) in view of Clark (US Patent No. 5,694,977).

Chow et al. disclose four flow channels and an intersection (see figure 1) thereof, a first flow channel (114), a second flow channel (116), a third channel (110) and a four channel (121), wherein the resistance of the third flow channel is higher than the resistance of the second flow channel (see slugs 120 and figure 2A) wherein the device is provided with a fluid element for analysis of the fluid (see background of the invention). Chow et al. fail to disclose a first valve and a second valve in the first and second flow channel.

Clark discloses a normal open check valve comprising a flow channel (114), wherein the valve allows flow of fluid in a first direction (116) when the pressure (flow rate) is lower than the pressure difference and the spring force or elastic body (109), wherein the valve stops the fluid when the pressure (flow rate) exceed the spring force or elastic body (109) and the pressure difference, wherein the valve allows flow of fluid in a second direction (reverse to the first direction) when the pressure (flow rate) is lower than the spring force and the pressure difference. It would have been obvious to one having ordinary skill in the art at the time the invention was made to have provided a normal open check valve in arrangement of Chow's device in order to prevent overflow or over pressurized of a fluid device as taught by Clark (see abstract of Clark).

Regarding claims 5-11, <sup>that</sup> the fluid element <sup>a column of</sup> is liquid chromatography, <sup>is</sup> a recitation of the intended use of the claimed invention must result in a structural difference between the claimed invention and the prior art in order to patentably distinguish the claimed invention from the prior art. If the prior art structure is capable of performing the intended use, then it meets the claim.

9. Claims 14-15 (as understood under broadly reasonable interpretation) are rejected under 35 U.S.C. 103(a) as being unpatentable over Chow et al (US Patent No. 5,800,690) in view of Clark (US Patent No. 5,694,977) as applied to claims 1-13 above, and further in view of Milleker et al (US Pub No. 2005/0154345).

The combination of Chow and Clark fails to disclose the valve has a movable and a fix electrode for detecting the position of the valve.

Milleker et al. disclose a valve has a movable electrode (138) and a fix electrode (118) for detecting the electrostatic capacity (see [0072]) varies based on the distance of the electrodes are moved. It would have been obvious to one having ordinary skill in the art at the time the invention was made to have provided a valve has a movable and a fix electrode in order to detect the distance between the valve and the valve seat and prevent overflow or over pressurized of the fluid device.

10. Claims 14-15 (as understood under broadly reasonable interpretation) are rejected under 35 U.S.C. 103(a) as being unpatentable over Chow et al (US Patent No. 5,800,690) in view of Clark (US Patent No. 5,694,977) as applied to claims 1-13 above, and further in view of Scheurenbrand et al (US Patent No. 6,182,941).

The combination of Chow and Clark fails to disclose the valve has a movable and a fix electrode for detecting the position of the valve.

Scheurenbrand et al. disclose a valve has a movable electrode (28') and a fix electrode (28) for detecting the electrostatic capacity (see Col 4 lines 58-65) varies based on the distance of the electrodes are moved. It would have been obvious to one having ordinary skill in the art at the time the invention was made to have provided a valve has a movable and a fix electrode in order to detect the distance between the valve and the valve seat and prevent overflow or over pressurized of the fluid device.

11. Claim 16 is rejected under 35 U.S.C. 103(a) as being unpatentable over Nakajima et al (US Pub No. 2004/0231726) in view of Clark (US Patent No. 5,694,977).

Nakajima et al. disclose a fuel cell having a fuel storage section (212), a power generating section (202) and a flow regulator (pressure controller 224), however, Nakajima et al fail to disclose a normal open check valve.

Clark discloses a normal open check valve comprising a flow channel (114), wherein the valve allows flow of fluid in a first direction (116) when the pressure (flow rate) is lower than the pressure difference and the spring force or elastic body (109), wherein the valve stops the fluid when the pressure (flow rate) exceed the spring force or elastic body (109) and the pressure difference, wherein the valve allows flow of fluid in a second direction (reverse to the first direction) when the pressure (flow rate) is lower than the spring force and the pressure difference. It would have been obvious to one having ordinary skill in the art at the time the invention was made to have provided a normal open check valve in arrangement of Nakajima's device in order to prevent overflow or over pressurized of a fluid device as taught by Clark (see abstract of Clark).

### *Conclusion*

12. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Johnson (US Patent No. 5,960,821) discloses a normal open check similar to applicant's invention.



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Any inquiry concerning this communication or earlier communications from the examiner should be directed to Cloud K. Lee whose telephone number is (571)272-7206. The examiner can normally be reached on Monday-Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Gregory Huson can be reached on (571)272-4887. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

CL

  
**RAMESH KIRSHNAMURTHY**  
**PRIMARY EXAMINER**